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Road Safety / Securite routiere

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ALCOHOL USE BY DRIVERS FATALLY INJURED IN MOTOR VEHICLE ACCIDENTS: 1989 AND THE PAST TEN YEARS

Background:

This leaflet provides information on blood alcohol concentration (BAC) determined for drivers fatally injured in motor vehicle accidents in the Canadian provinces and territories. The information is derived from the Traffic Injury Research Foundation (TIRF) Fatality Database[1], which consists of data collected from provincial coroners' or medical examiners' reports and reports prepared by investigating police officers. These data are supplied by provincial agencies.

Information has been compiled since 1973 for seven provinces (British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, New Brunswick and Prince Edward Island). In 1985, Nova Scotia was added to the database followed by Newfoundland in 1986. In 1987, similar data from Quebec and the two territories became available, making the fatality database representative of all the provinces and territories.

In reporting the data in the figures to follow, a number of conventions have been adopted. The reader should be aware that:

1. The percentages expressed are the percent of drivers tested for blood alcohol concentration. About 78.5% of fatally injured drivers across Canada were tested for alcohol use in 1989, compared to 77% in 1988. Excluding Quebec, the rate of testing for alcohol use was 83.7%. In Quebec, 64.8% of drivers were tested, slightly higher than 62% in 1988.

2. The 1989 results include data from all provinces and territories in Canada and are based on victims dying within twelve months of the accident. The ten-year results (1980-1989) are based on data from the original seven provinces and include victims whose death occurred within six hours after the accident, a convention established in previous years.

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1. The TIRF Fatality Database is financially supported by the Canadian Council of Motor Transport Administrators (CCMTA) and Transport Canada.

3. The data include only fatally injured drivers of the principal types of motorized vehicles on public roadways, i.e., automobiles, non-articulated trucks/vans, motorcycles, tractor-trailers and buses. Excluded are snowmobiles, other off-road vehicles, bicyclists, pedestrians and passengers.

4. BACs are reported in milligrams per 100 milliliters of blood, (e.g., .08 = 80 mg% BAC). The percentage of drivers which had been drinking prior to the accident (BAC greater than 1 mg%) and the percentage which were legally impaired (BAC exceeding 80 mg%) are shown separately in the following figures. For clarity, Figures 5 to 7 show only the percent legally impaired.

1989 Characteristics:

In 1989, 1872 out of 2384 fatally injured drivers were tested for level of alcohol in the blood. Among tested drivers, 46.5% had been drinking, a decrease from 50.7% in 1988; 38.8% of tested drivers were legally impaired, a decrease from 40.3% in 1988.

Figures 1 to 3 present data from all of the provinces and the two territories for 1989. Figure 1 shows the percent of fatally injured drivers who had been drinking and the percent legally impaired for each province. (For the Yukon and Northwest Territories, see Table 1 of the Appendix.) Although there appears to be considerable variation among provinces, it must be emphasized that the percentages for the smaller provinces are less reliable (i.e., more subject to chance variation) than those for larger provinces. In addition, provinces east of Ontario (except for Newfoundland with a testing rate of 79.4%) had lower rates of testing (62.5 - 67.6%) than the remaining provinces where rates of testing ranged from about 83% to 91%. Percentages based on lower rates of testing should be interpreted with caution because there is a possibility of selection bias, i.e., drivers suspected of impairment may be more likely to have been tested.

Of the 1872 drivers tested, 79.7% were male and 20.3% were female. Among males, 51.9% had been drinking compared to 25.3% of the females. The corresponding rates of illegal impairment were 43.9% for males and 19.0% for females (figure not provided). Figure 2 shows that among different age groups, the highest proportion of alcohol impairment occurred among 21-35 year olds and then steadily declined after age 35. Examination of BAC by vehicle type (Figure 3) reveals that truck/van (excluding tractor-trailer) drivers had the highest rate of alcohol impairment, followed by motorcycle drivers and automobile drivers.

Trends During the Past Ten Years:

Figures 4 to 7 present data for the ten-year period, 1980 to 1989. To maintain consistency from year to year, only data from the original seven provinces have been aggregated. Findings are based on victims whose death occurred within six hours after the accident.

Figure 4 shows that the general downward trend from 1981 to 1989 continues. In 1989, the percentage of drivers who had been drinking (44.2%) decreased 5.6% from 1988. The percentage of drivers legally impaired (36.3%) continued to decline.

Figure 5 shows that over the ten-year period, female drivers killed are consistently less likely to be impaired by alcohol than are males. Alcohol impairment among males and females continued to decline. In 1989, 16.8% of fatally injured females were legally impaired, compared to 41.4% of males.

Figure 6 shows that the overall downward trend is not exhibited equally by all age groups. The under 25 years group showed the largest decreases over ten years, and the downward trend continued slightly in 1989. The 26-35 years group showed little change over time, except for 1989 where they showed a decrease of 9% from 1988. The 36-45 years group showed an overall downward trend, with an increase of 4.6% in 1989. The 46 and over group continued to decline with its lowest rate ever of 19.3%.

Figure 7 demonstrates that over the ten-year period, fatally injured drivers of trucks/vans have the highest rate of impairment, followed by motorcycle drivers. In fact, the trend lines for the two groups are very similar over time. The rates for both groups increased between 1988 and 1989, with motorcycle drivers showing the largest increase (a 4.9% increase over 1988). The declining trend for automobile drivers continued in 1989 with its lowest ever rate of 33.1%. Tractor-trailers are not included in Figure 7 because the small number of fatalities in this group results in unreliable year-to-year fluctuations.

For further information write to:

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Figure 1

Distribution of Blood Alcohol Concentration Among Fatally Injured Drivers by Province: 1989

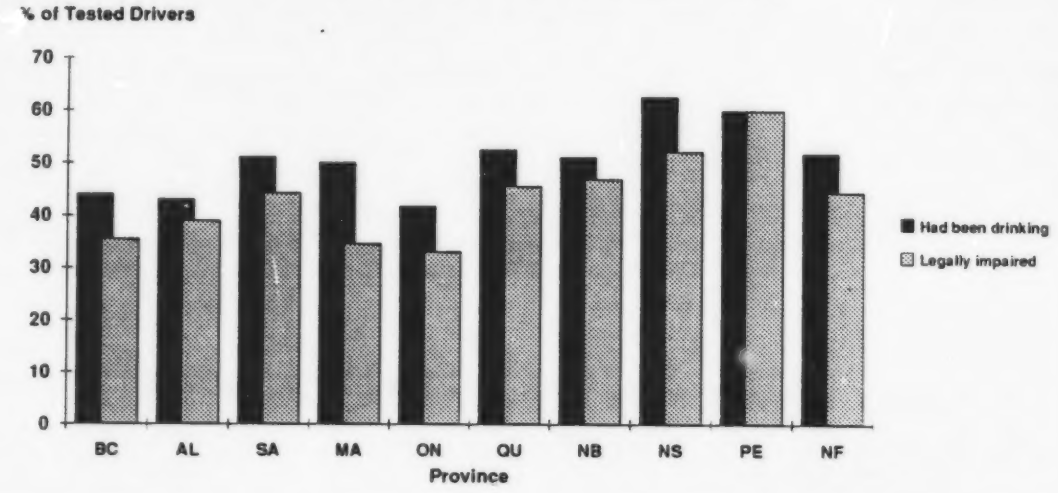


Figure 2

Distribution of Blood Alcohol Concentration Among Fatally Injured Drivers by Age: 1989 (Canada)

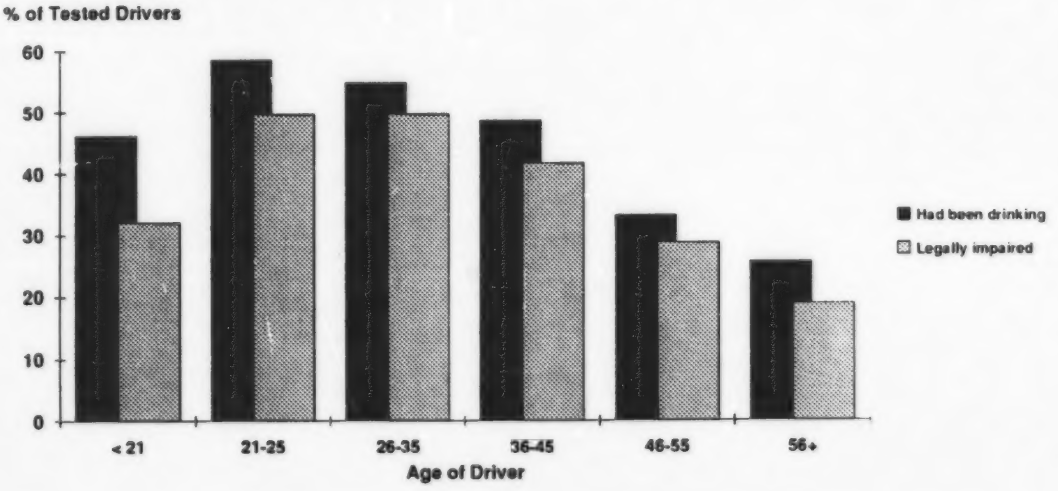


Figure 3

Distribution of Blood Alcohol Concentration Among Fatally Injured Drivers by Vehicle Type: 1989 (Canada)

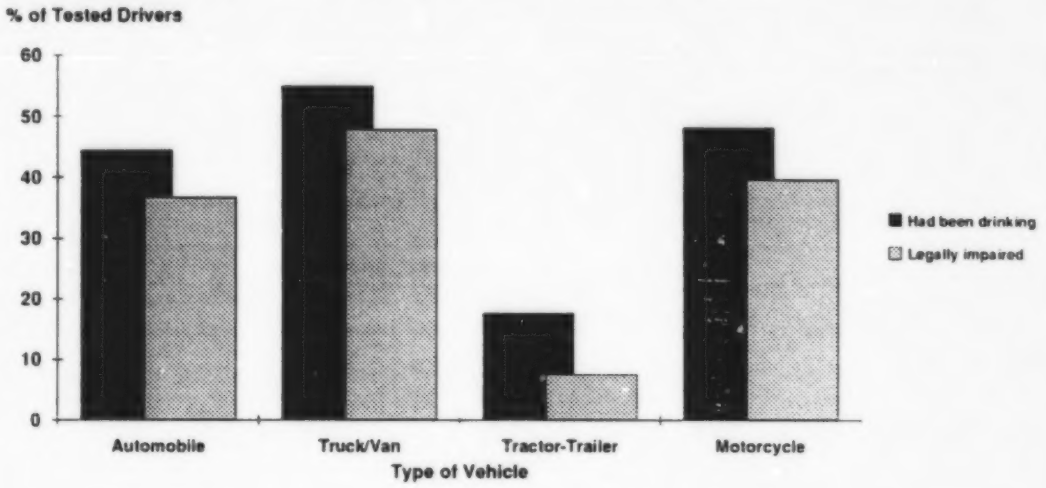


Figure 4

Distribution of Blood Alcohol Concentration Among Fatally Injured Drivers: (Seven Provinces)

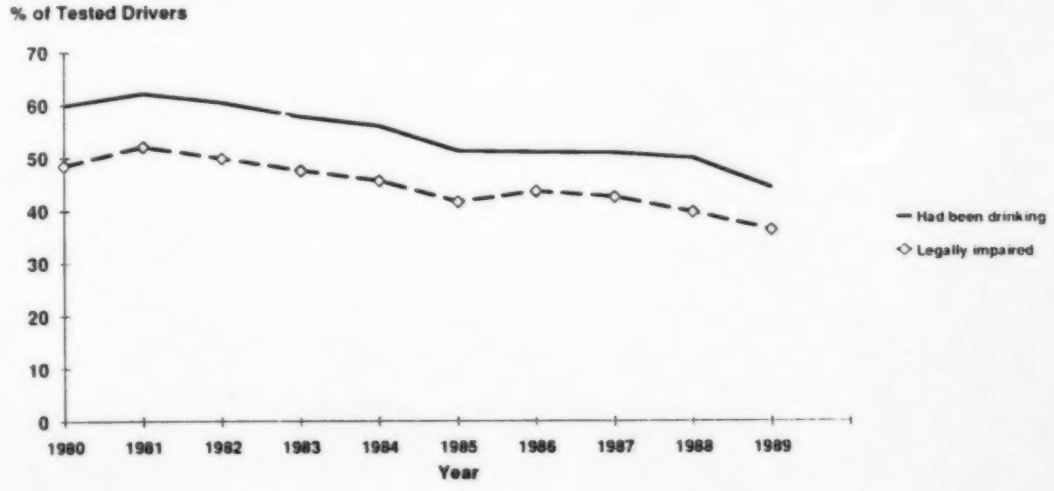


Figure 5

Percent of Fatally Injured Drivers with Illegal Blood Alcohol Concentration by Sex: (Seven Provinces)

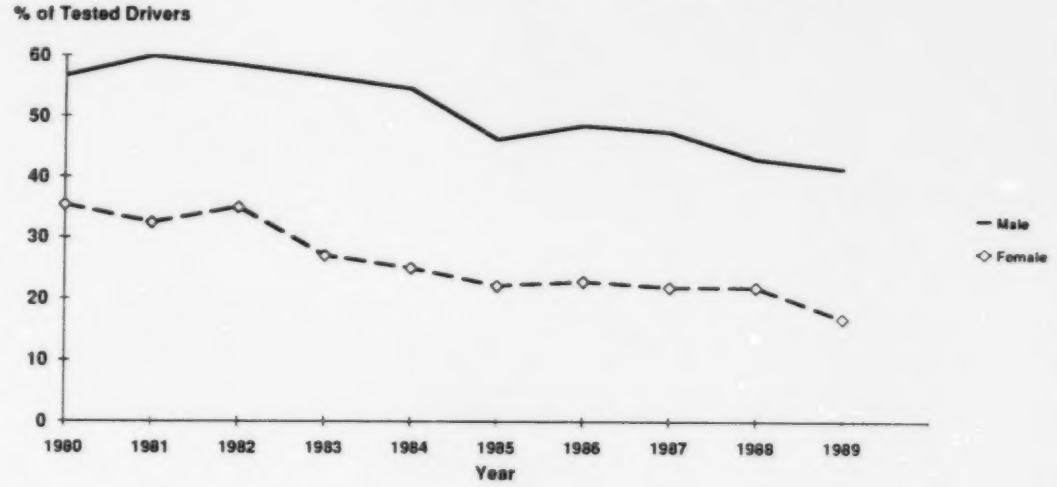


Figure 6

Percent of Fatally Injured Drivers with Illegal Blood Alcohol Concentration by Age Group: (Seven Provinces)

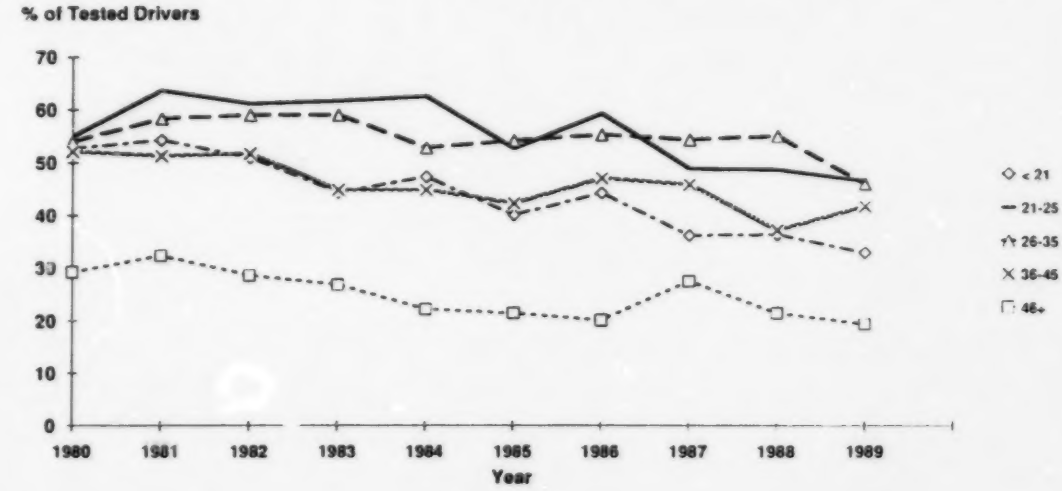
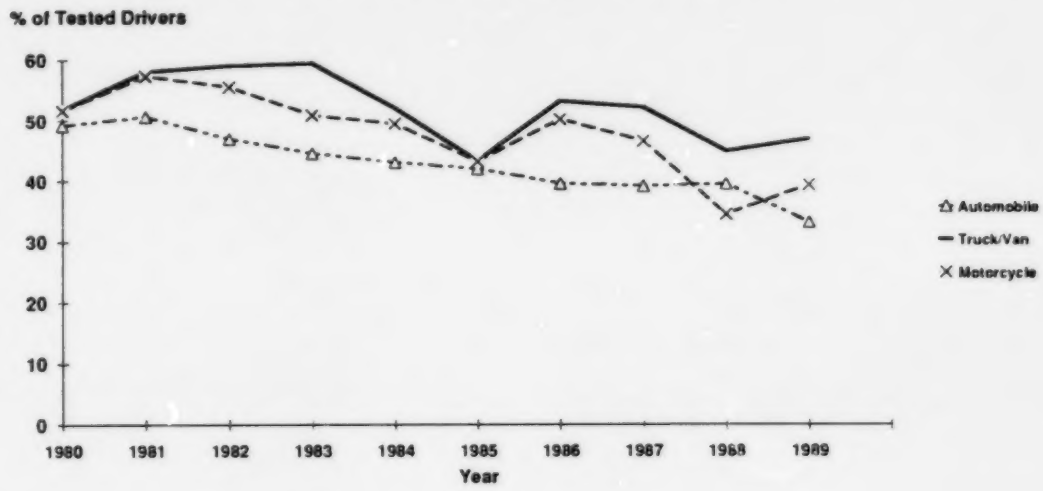


Figure 7

Percent of Fatally Injured Drivers with Illegal Blood Alcohol Concentration by Vehicle Type: (Seven Provinces)



APPENDIX

Corresponding Data for Figures 1-7*

Table 1

Distribution of BAC among fatally injured drivers by province/territory: 1989 (Death within 12 months)

Province	Number of drivers tested	Percent of tested drivers >1 mg%	>80 mg%
British Columbia	273	44.0	35.5
Alberta	241	43.2	39.0
Saskatchewan	104	51.0	44.2
Manitoba	72	50.0	34.7
Ontario	619	41.7	33.1
Quebec	426	52.4	45.5
New Brunswick	49	51.0	46.9
Nova Scotia	48	62.5	52.1
Prince Edward Island	5	60.0	60.0
Newfoundland	27	51.9	44.4
Yukon	4	25.0	25.0
Northwest Territories	4	75.0	50.0
TOTAL	1872	46.5	38.8

Table 2

Distribution of BAC among fatally injured drivers by age: 1989 (Canada; death within 12 months)

Age Group	Number of drivers tested	Percent of tested drivers >1 mg%	>80 mg%
< 21	291	46.1	32.0
21-25	316	58.5	49.7
26-35	515	54.8	49.7
36-45	284	48.6	41.6
46-55	157	33.1	28.7
56+	309	25.6	18.8

* e.g., Table 1 corresponds to data shown graphically in Figure 1.

Table 3

Distribution of BAC among fatally injured drivers by vehicle type:
1989 (Canada; death within 12 months)

Vehicle Type	Number of drivers tested	Percent of tested drivers >1 mg%	Percent of tested drivers >80 mg%
Automobile	1236	44.4	36.7
Truck/Van	416	54.8	47.8
Tractor-Trailer	40	17.5	7.5
Motorcycle	177	48.0	39.6
Bus	3	33.3	33.3

Table 4

Distribution of BAC among fatally injured drivers:
1980-1989 (seven provinces; death within 6 hours)

Year	Percent of tested drivers >1 mg%	Percent of tested drivers >80 mg%
1980	59.9	48.5
1981	62.2	52.1
1982	60.5	49.9
1983	57.8	47.6
1984	56.0	45.7
1985	51.3	41.7
1986	51.0	43.6
1987	50.8	42.5
1988	49.8	39.7
1989	44.2	36.3

Table 5

Percent of fatally injured drivers with illegal BAC by sex:
1980-1989 (seven provinces; death within 6 hours)

Sex	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Male	56.6	59.9	58.4	56.5	54.5	46.2	48.5	47.4	43.0	41.4
Female	35.4	32.4	34.9	27.0	25.0	22.1	22.8	21.9	21.9	16.8

Table 6

Percent of fatally injured drivers with illegal BAC by age:
1980-1989 (seven provinces; death within 6 hours)

Age	1980	1981	1982	1983	1984	1986	1986	1987	1988	1989
< 21	52.7	54.2	50.9	44.3	47.3	40.1	44.2	36.2	36.3	33.0
21-25	54.9	63.5	61.1	61.6	62.4	52.6	59.2	48.8	48.6	46.5
26-35	54.0	58.3	59.0	59.0	52.8	54.1	55.2	54.3	55.0	46.0
36-45	52.1	51.3	51.7	44.8	44.8	42.3	47.0	45.8	37.2	41.8
46+	29.2	32.4	28.6	26.8	22.1	21.4	20.0	27.5	21.4	19.3

Table 7

Percent of fatally injured drivers with illegal BAC by vehicle type:
1980-1989 (seven provinces; death within 6 hours)

Vehicle Type	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Automobile	49.2	50.6	46.9	44.5	43.0	41.3	39.5	39.1	39.5	33.1
Van/Truck	51.8	58.0	59.0	59.3	52.0	43.2	53.1	52.1	44.8	46.8
Motorcycle	51.6	57.3	55.5	50.8	49.4	43.1	50.1	46.5	34.4	39.3